PANASONIC®

SPEAKER SYSTEM

OPERATING INSTRUCTIONS

MODELS SB-550 & SB-750

Before operating this set, please read these instructions completely.

PREFACE

Thank you very much for selecting this PANASONIC System. This unit was especially designed to improve the directivity in order to reproduce a more natural sound.

In the reproduction of stereo, directivity has a great effect upon the normal acoustic image. The better this directivity is, the more balanced will be the stereo reproduction, not only directly in front of the speaker but also at places other than the front of the speaker. The dome-type speakers, which feature excellent directivity in the middle and high ranges, have been especially developed to improve this directivity, as shown in figure 1. Improvements have been made of the input capacity, with larger output amplification and the ablity to use with a multi-channel system. The multi-channel system, one of the main improvements, uses a large magnet and a new soft foam rubber construction in the woofer. Thus, the speaker is able to reproduce musical sound perfectly, without distortion even at peak power.

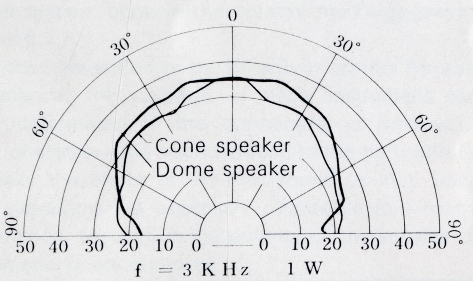
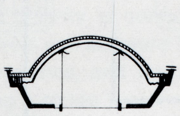
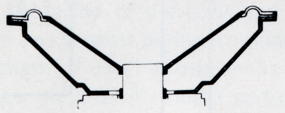


Fig. -1



Dome speakers
Fig. -2



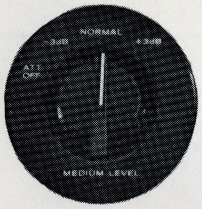
Cone speaker
Fig. -3

PART NAMES AND FUNCTIONS

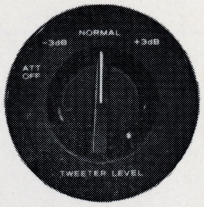
LEVEL CONTROL

By adjusting the respective controls, TWEETER and MEDIUM, the high-range and middle-range sound can be controled to the desired level depending on the program material.

- +3 dB............To increase the mid-range and the high-range
- NORMAL ......To listen to most natural sound
- −3 dB............To decrease the mid-range and high-range
- ATT OFF.........To use the unit as a 2- or 3-channel multi-amplifier system


NORMAL
−3dB
+3dB
ATT OFF
MEDIUM LEVEL

MEDIUM

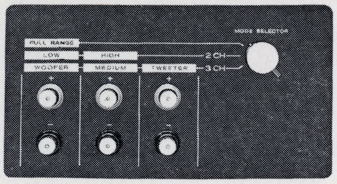

NORMAL
−3dB
+3dB
ATT OFF
TWEETER LEVEL

TWEETER

MODE SELECTOR

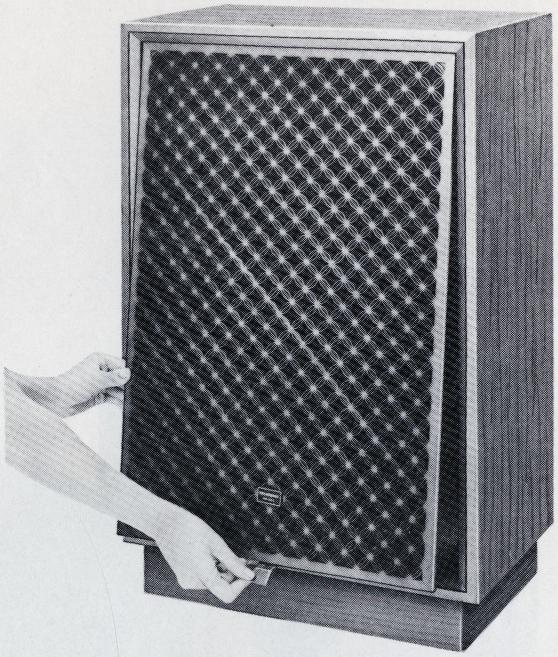
When using as an ordinary 3-way system with one amplifier, or as multiamplifier system with two or three amplifiers.

- **FULL RANGE**
  When using as a 3-way system, using one amplifier.
- **2CH**
  When using as a 2-channel system, with two amplifiers.
- **3CH**
  When using as a 3-channel system, with three amplifiers.


MODE SELECTOR
FULL RANGE
LOW
HIGH
2 CH
WOOFER
MEDIUM
TWEETER
3 CH
+
−

GRILLE CAN BE REMOVED

Removable not griele, just pull the tape at the bottom of the front baffle.



BEFORE CONNECTING WITH AMPLIFIER

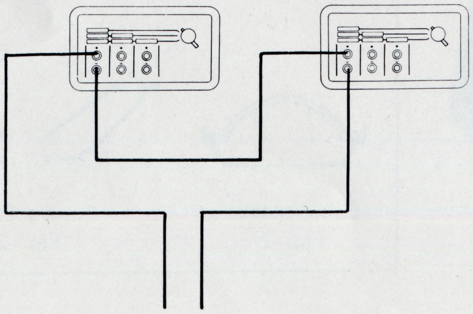


Fig. 4 Connection in series

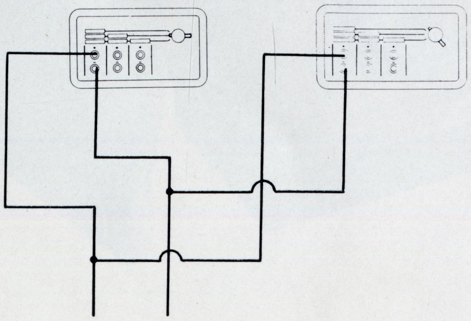


Fig. 5 Connection in parallel

BEFORE CONNECTING WITH AMPLIFIER

PLACEMENT

- **A solid wall behind the speaker is better**
  It is better, in general, to have a solid wall behind the speaker system because a solid wall behind the system thus will not absorb the sound of the low frequencies, which will result in a decrease in low frequency characteristics. If, on the contrary, the wall behind the sys-tem is not solid, it tends to absorb the sound. For this reason, the sound characteristics deteriorate, in comparison with a solid wall. In addition, resonance sound from the back wall may occur when the volume is loud.

- **A "soft" wall in front of the speaker system is better**
  If the wall in front of the system is solid, unnecessary amplification occurs throughout a specified frequency (mainly the low range). For this reason, it is better to hang a thick curtain on this wall if it is solid.

- **Carpet for hard floors**
  It is more effective if there is a carpet on the floor.

- **Good location**
  Select a level place where there is no vibration, no moisture, no direct exposure to the sun's rays, and where the unit is away from heating equipment.

OPERATION NOTES

- Be sure to connect the output of the amplifier through a channel divider when using as a multi-amplifier system. In addition, be sure the crossover frequency is within the range specified.
- When using as a multi-amplifier system, be sure to make correct connections of the low, middle and high sound. If connections are made to the wrong speaker from the amplifier, speaker damagecould result.
- If the mode selector is changed to FULL RANGE during multi-channel operation, amplifier damage may result. Therefore, before changingfrom multi-amplifier to full-range operation,first disconnect the wires connected to each speaker.
- Before changing from ordinary 3-way system operation to 2-channel or 3-channel amplifier operation, be sure to turn off the power of each amplifier.
- The cabinetry of the unit is constructed of selected materials and the unit was designed incorporating the finest technology, but sudden changes of temperature and humidity should be avoided. Also avoid placement where the unit is exposed directly to the sun's rays or near heating equipment.

MAXIMUM INPUT

- Maximum input of the SB-550 is 60W
- Maximum input of the SB-750 is 80W

Confirm the output characteristics of the amplifier before connecting it to the unit.

IMPEDANCE OF THE AMPLIFIER

- Impedance of both models SB-550 and SB-750 is 8Ω. Be sure to connect either of these systems to the 8Ω speaker terminals of the amplifier.
  If connection is not made in this way, the output characteristics will not be as specified and distortion may occur.
- If two or more speaker systems are used for each channel, the impedance of the speaker system will change.
  If 2 speakers of 8Ω impedance are connected in series, the impedance becomes 16Ω, and if connected in parallel, impedance becomes 4Ω. This calculation is easy to compute. Following the formula shown in the figure, calculate the value according to the number of speakers connected to the amplifier.

When connecting speakers of the same impedance in series

$R1+R2+\cdots\cdots Rn=nR\ (\Omega)$

R = Impedance of one speaker   n = Number of speakers connected

When connecting in parallel

$$\frac{1}{\frac{1}{R1}+\frac{1}{R2}\cdots\cdots\frac{1}{Rn}}=\frac{R}{n}\ (\Omega)$$

(Example)

Connecting two speakers of 8Ω impedance in parallel results in a total impedance of 4Ω.

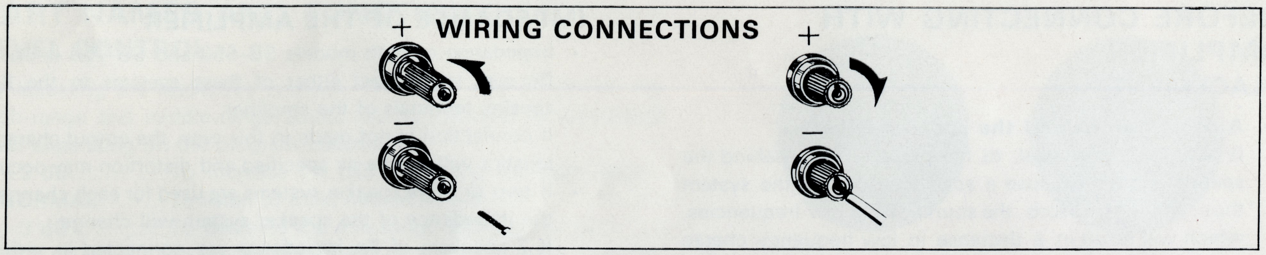
$$\frac{1}{\frac{1}{8}+\frac{1}{8}}=4\Omega$$

They should, therefore, be connected to the 4Ω terminals of theamplifier.

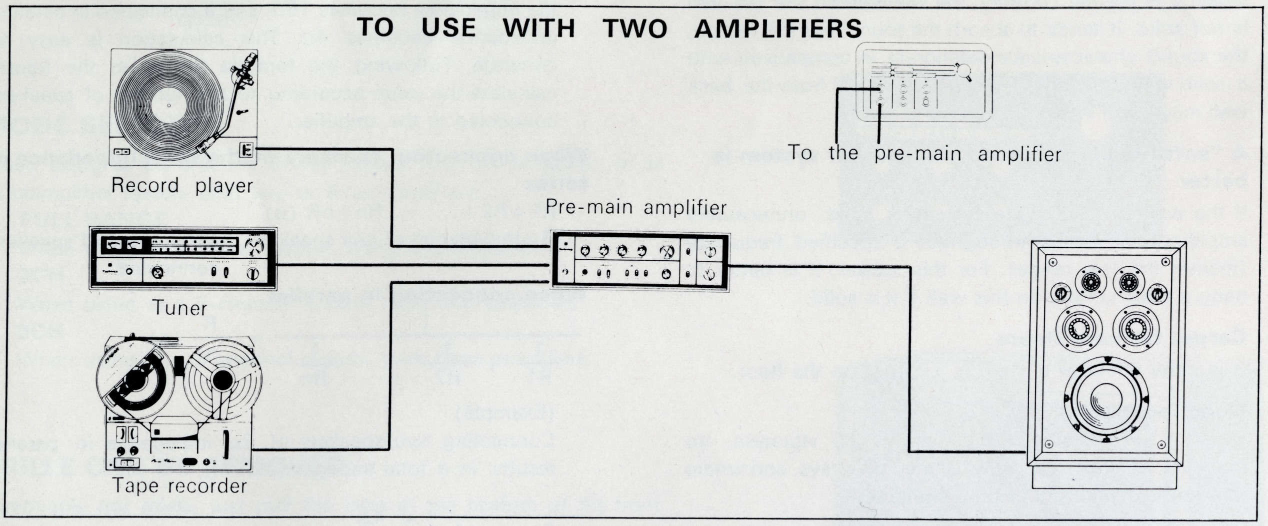
IF THE POLARITY (+ −) OF THE SPEAKER IS IN-CORRECT

- When connecting this speaker system with an existing speaker system, observe the polarity markings previously described.
  When the connection of the polarity is correct for a stereo performance, the position of each instrument can be clearly determined. If the connection is incorrect, the charm of stereo—the sound spread to the right and left—especially the effect of the low sound, is lost. Because these symptoms are especially noticeable in a monaural performance, re-confirm the polarity of the speaker if this phenomena is encountered.
- To check whether polarity is correct or not, set the bass tone controls to maximum and the treble to minimum and connect either the left or right speaker system in reverse polarity while playing a monaural record. If the bass sound is loud and the sound is emitted from the area directly between the right and left speakers, then this connection of the polarity is correct.
- If the polarity is correct, the sound of the right and left speakers can be heard from one speaker during a monaural performance, and the position of each instrument is felt during a stereo performance. As a result, stereo performances can be enjoyed with full stereophonic sound.

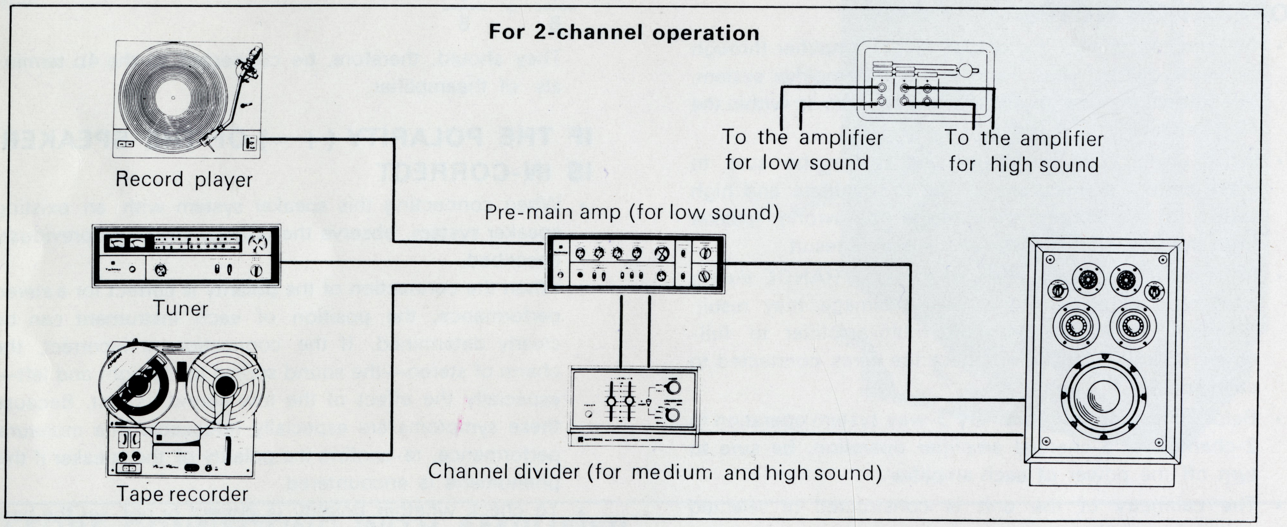
WIRING CONNECTIONS



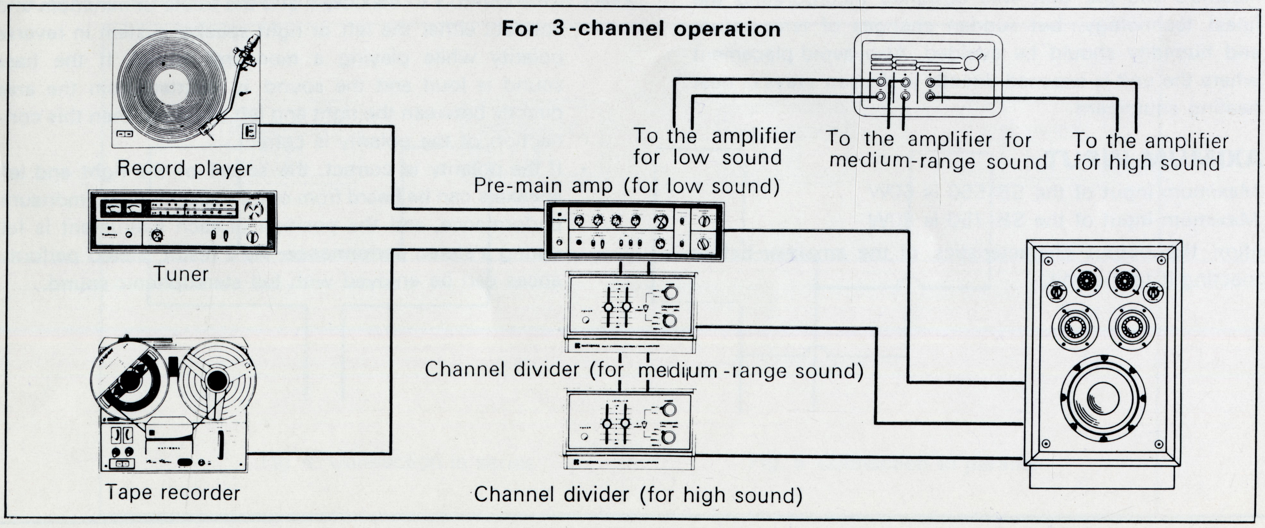
TO USE WITH TWO AMPLIFIERS


Record player
Tuner
Tape recorder
Pre-main amplifier
To the pre-main amplifier

For 2-channel operation


Record player
Tuner
Tape recorder
To the amplifier for low sound
To the amplifier for high sound
Pre-main amp (for low sound)
Channel divider (for medium and high sound)

For 3-channel operation


Record player
Tuner
Tape recorder
To the amplifier for low sound
To the amplifier for medium-range sound
To the amplifier for high sound
Pre-main amp (for low sound)
Channel divider (for medium-range sound)
Channel divider (for high sound)

HOW TO USE

WIRING CONNECTIONS

1) Turn the screw in the direction of the arrow for 3～4 turns to loosen it.
2) Insert the connection wire into the screw hole and turn the screw completely in the direction of the arrow for complete connection.

TO USE WITH ONE AMPLIFIER

1) Set the mode selector to the FULL RANGE position.
2) Connect the plus connection of the FULL terminal of this unit with the plus terminal of the amplifier, and connect the minus FULL terminal with the minus terminal of the amplifier.

TO USE WITH TWO AMPLIFIERS (2-CHANNEL AMPLIFIER SYSTEM)

For 2-channel operation

- To use with two amplifiers (2-channel amplifier system by using two amplifiers—one for the low sound, the other for the middle and the high sound). The woofer of this unit is powered by the amplifier for low sound, and the tweeter(s) and squawker(s) are powered by the amplifiers for the middle and the high sound. Separation of the sound of the squawker and the tweeter is accomplished within the network of this unit.
- For reproduction, the input power of each speaker must be as follows:
  LOW terminal peak 60W (SB-550), peak 80W (SB-750)
  HIGH terminal peak 25W (SB-550), peak 40W (SB-750)

1) Set the mode selector of this unit to the 2 CH position.
2) Set the MEDIUM LEVEL and TWEETER LEVEL controls to the ATT OFF position.
3) Connect the speaker wires from the speaker connection terminals of the amplifier for low sound to the LOW terminals of this unit, and from the terminals of the amplifier for middle and high sound to the HIGH terminals of this unit.
4) Set the crossover frequency of your channel divider to 400Hz～600Hz.
5) Control the volume of each speaker system for low sound and middle/high sound with the volume control of the respective amplifier. To control the volume, first set the volume control for middle and high sound to the minimum position, and then set the volume control for low sound to the desired position. Then increase the volume of the middle and high sound.

- If your channel divider is 12db/oct, it may be better to make the squawker reverse-phase. To do so, connect the plus terminals of the amplifier for the middle and high sound to the minus HIGH terminals of this unit.

TO USE WITH THREE AMPLIFIERS (3-CHANNEL AMPLIFIER SYSTEM)

For 3-channel operation

- If this unit is used as a 3-channel multi-amplifier system, the woofer of this unit is powered by the amplifier for low sound, the squawker (s) of this unit is driven by the amplifier for middle sound and the tweeter (s) of this unit is driven by the amplifier for high sound.
- For reproduction, input power of each speaker must be as follows:
  WOOFER terminal peak 60W (SB-550), peak 80W (SB-750)
  MEDIUM terminal peak 25W (SB-550), peak 40W (SB-750)
  TWEETER terminal peak 15W (SB-550), peak 30W (SB-750)

1) Set the mode selector of this unit to the 3 CH position.
2) Set the MEDIUM LEVEL and TWEETER LEVEL controls to the ATT OFF position.
3) Connect the speaker wires from the speaker connection terminals of the amplifier for low sound to the WOOFER terminals of this unit. Make similar connections from the amplifier for middle-range sound to the MEDIUM terminals, and from the amplifier for highso und to the TWEETER terminals.
4) Set the crossover frequency of your channel divider to 400Hz～600Hz (between woofer and squawker), and to 4 kHz～6 kHz (between squawker and tweeter).
5) Control the volume levels with the volume controls of the respective amplifiers. For volume control, first set the volume controls for middle range and high sound to their minimum positions and then set the vo volume control for low sound to the desired position. Then set thevolume control for middle-range sound and then that for high sound until all three sounds are balanced.

- If your channel divider is 12db/oct, it may be better to make the squawker reverse-phase. To doso, connect the plus speaker connection terminals of the amplifier for middle sound to the minus MEDIUM terminals of this unit.

SPECIFICATIONS

SB-550

System : Completely enclosed 3-way 3-speaker system

Speaker
Woofer : 30-cm cone-type high-compliance speaker
Squawker : 15-cm dome-type speaker
Tweeter : 10-cm dome-type speaker
Impedance : 8Ω
Maximum input : 60W
Crossover frequencies
Full range
Low/medium-range : 600 Hz
Medium-range/high : 5 kHz
Multi-channel
(2-channel)
Low/medium-range : 400 Hz～600 Hz
(3-channel)
Low/medium-range : 400 Hz～600 Hz
Medium-range/high : 4 kHz～6 kHz
Sound pressure level : 94 db/W
Network : −12 db/oct
Frequency range : 30～20,000 Hz
Dimensions : 14$\frac{15}{16}$″(W)×26″(H)×11$\frac{11}{16}$″(D) (380×660×297mm)
Weight : 42 lb. (19 kg.)

SB-750

System : Completely enclosed 3-way 5-speaker system

Speakers
Woofer : 30-cm cone-type high-compliance speaker
Squawkers(2) : 15-cm dome-type speakers
Tweeters(2) : 10-cm dome-type speakers
Impedance : 8Ω
Maximum input : 80W
Crossover frequencies
Full range
Low/medium-range : 600 Hz
Medium-range/high : 5 kHz
Multi-channel
(2-channel)
Low/medium-range : 400 Hz～600 Hz
(3 channel)
Low/medium-range : 400 Hz～600 Hz
Medium-range/high : 4 kHz～6 kHz
Sound pressure level : 95 db/W
Network : −12 db/oct
Frequency range : 25～20,000 Hz
Dimensions : 18$\frac{7}{8}$″(W)×26$\frac{3}{4}$″(H)×11$\frac{11}{16}$″(D) (480×680×297mm)
Weight : 55 lb. (25 kg.)

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